Asya Starodubtseva

Leasing as the means of equipment financing:
Comprehensive assessment

Helsinki Metropolia University of Applied Sciences

Metropolia Business School

European Business Administration

Leasing as the means of equipment financing: comprehensive assessment

9 May 2017

Helsinki Metropolia University of Applied Sciences

Author(s) Title Number of Pages Date	Asya Starodubtseva Leasing as the means of equipment financing: comprehensive assessment 36 pages 9 May 2017
Degree	Business Administration
Degree Programme	Double degree in European Business Administration
Specialisation option	Accounting and Finance
Instructor(s)	Kevin McIntire, Lecturer Michael Keaney, International Programs Coordinator

A *Lease* is a contract that allows a certain entity to use property that it doesn't possess in exchange for series of periodic payments to the owner. Thereby, a lessee - an entity such permit is granted to, can generate earnings from its use. In essence, leasing is simply another method of financing in contrast to bank loans, private placements and other.

The Survey of Corporate Leasing Analysis (Makherjee, 1991:96) conducted by Tarun K. Makherjee in 1988 showed that for the firms surveyed (Fortune 500) leasing was not a predominant means of financing an asset, moreover, only 14% of companies expected their lease levels to increase. Despite this fact, more equipment is financed today by equipment leases that by … any other method of equipment financing (Fabozzi, 2008: 531). For this reason, understanding the mechanics of lease financing as well as its benefits and drawbacks in relation to other methods is an issue of high significance. For this reason, description of the mechanics of lease financing and its comprehensive assessment in comparison to other alternatives is the main research focus of this paper.

While some assume that the principal reason for leasing to exist is the possibility to derive different cost benefits from owning an asset, in reality leasing is more that just financing vehicle. Apart from exploiting the tax benefits, companies can also use leasing to promote the sales of their products and secure their receivable portfolios. Benefits of leasing vary greatly depending on the company and the type of lease, however, as a general rule "firms have found financing their product via leasing a highly profitable business" (Fabozzi, 2008: 531).The company examples include, but not limited to IBM, Hewlett-Packard, Cisco and many others.

Keywords	Lease financing, IAS17, Valuation

Table of Contents

Tables and figures

1 Introduction

During the times of rapidly changing business environment profit maximization that goes along with value creation has remained the major motive for the companies' operations. In term, assets and financing of those assets is an essential part of this process.

Leasing is a contract that transfers substantially all the benefits related the ownership of an asset to a certain party without transfer of ownership itself. In other words, the company can use an asset it does not possess in exchange for series of periodic payments to the owner. From the point of view of the lessee – the company that has the permission to use an asset, earnings come from the use of the leased asset rather than from its ownership as such. In essence, leasing is simply another method of financing in contrast to bank loans, private placements and other.

As any contract, lease contract can be highly tailored to organizational needs. This fact constitute an advantage as well as a challenge, as it requires a deep understanding of both: organizational needs and lease mechanics, which can be highly complicated.

From 1950s, the time when such contractual arrangements began to emerge, there has been a considerable increase in amount of equipment financed by leases. The Survey of Corporate Leasing Analysis (Makherjee, 1991:96) conducted by Tarun K. Makherjee in 1988 showed that for the firms surveyed (Fortune 500) leasing was not a predominant means of financing an asset, moreover, only 14% of companies expected their lease levels to increase. Despite this fact, nowadays leasing has gained considerable popularity as a financing vehicle and, according to Frank Fabozzi (Fabozzi, 2008: 531), more equipment is financed today by equipment leases than by any other method of equipment financing.

According to the data provided by Leaseurope (European Leasing Association), the size of European leasing market for new production equipment in 2015 reached EUR 234,178 billion, which constitute 8% increase compared to 2014.

While market has already appreciated the benefits of such method of financing, there are certain challenges caused by complexity of lease arrangements. It leads to the need for comprehensive assessment of leasing as the means of equipment financing.

There has been a long academic discussion over various aspects of leasing that one way or another center around lease versus buy analysis. Around the time of Anderson-Martin survey (Anderson & Martin, 1977:41) the cornerstone of the discussion was weather to consider lease proposal a financing or capital budgeting (investment) decision. The debate went further, as described by O'Brien and Nunnally (O'Brien & Nunnally, 1982: 30), and given that leasing is the financing decision the main problem was to determine the "net advantage to leasing" – NAL, in relation to the "purchase" option. The focus here was the discount rate to be used in NAL calculations (cost of capital vs cost of debt). In 1988 Harold Bierman raised an issue of how Alternative Minimum Tax affects the lease decision (Bierman, 1988: 87) and came to conclusion that leasing can offer an advantage in this respect.

However, the reasons for choosing lease over buy/borrow alternative are not limited to NAL calculations and tax benefits. Frank Fabozzi in his Complete CFO Handbook, 2008 apart from cost related reasons mentions conservation of working capital, preservation of credit capacity, risk of obsolescence, restrictions on management and impact on cash flow and book earnings among other aspects to consider. Thus, while academic literature, as well textbooks (e.g. Van Horne, 2008:553), is very much focused on the determination of purely economic benefits to leasing in comparison to purchase option, the practical aspects are neglected.

Because the lessee is obligated to make a series of payments, a lease agreement resembles a debt contract, the advantages cited for leasing are often based on a comparison between leasing and purchasing using borrowed funds (Fabozzi, 2008: 536). Thus, the question of advantages of leasing comparing to other financing methods narrows down to analysis of lease vs buy/borrow alternative, which is the intended research question.

As can be seen from the previous abstracts, the discussion of solely economic reasons would not provide a complete justification for choosing (or not choosing) leasing over other financing option. Thereby, examination of practical aspects, e.g. accounting for leases, effects on the company's financial statements, will also be the essential part of the research. In other words, ***description of the mechanics of lease financing and its comprehensive assessment in comparison to purchase alternative*** will be the main research focus of the thesis.

Chapter 2 describes the basic elements of lease arrangements and goes into details about different types of leases and their structures. It is an introductory chapter that gives a general understanding of lease terminology.

Chapter 3 of this paper is dedicated to academic discussion surrounding the topic and the analysis of purely economic aspects to leasing.

Chapter 4 continues by describing practical aspects. Special attention is given to lease accounting and the effects on the company's balance sheet.

Chapter 5 presents the current market data, as well as gives some practical examples of lease arrangements and their comprehensive comparison.

Chapter 6 summarizes the results of chapters 2-5 and draws the final conclusion on the attractiveness of leasing as the method of financing.

2 Mechanics of lease financing

2.1 General aspects

Lease is a contract that allows one party – the lessee, to use an asset provided by another party - the lessor, in return for the series of payments. The simplest and the most familiar to the general public forms of leasing would be apartment rents and leasing of automobiles. Talking in business terms, rent of a building or land would also constitute a lease arrangement. Equipment is another type of asset, apart from land, buildings or production facilities that can be leased. The basic and the most common steps in setting the arrangement for equipment lease are as follows:

- ➔ Company's (lessee) ***decision on the type of equipment***, including the equipment manufacturer, terms of guarantee, model and other specifications. This step also include any negotiations that a normal sales contract would include. Negotiation of price for equipment is the part of lessee's responsibilities.
- ➔ ***Negotiation of lease terms***: period, the amounts and timing of rent payments, ***signing*** of a lease contract.
- ➔ ***Assignment of purchase rights*** to the lessor, signing the contract for sale of the equipment. After the sales contract has been signed, the equipment is then delivered to the lessee that accepts the delivery. The lessor pays for the equipment accordingly.

In essence, in the described arrangement, one party lend money to another party for the equipment purchase, which is very similar to a loan setting with equipment as a collateral. The main difference between the loan agreement and the lease contract at this point is the title to ownership of the acquired asset.

The terms of the lease contract also include clauses that regulate aspects that may arise during the lease period. Maintenance is considered one of those aspects. When all the cost associated with the maintenance of the leased equipment are accounted by the lessee, the lease is called a *net lease or a triple-net lease* (Fabozzi, 2008: 532).

By the end of the lease term there are several options for the parties to consider: the lease can be renewed on the similar conditions, the lessee can buy the equipment or return it and terminate the contract. Usually the contract specify if there is a possibility for renewal or acquisition of an asset by the end of the lease term.

In this way, there are two important considerations that are necessary to be made at this point:

(1) Leasing is similar to debt financing due to the fact that both arrangements imply the loan of funds. The main difference is in title to ownership of an asset. The former implies the lessor to own an asset, while the latter transfers the ownership to the company that uses the equipment.
(2) Lease contracts can be tailored to organizational needs and vary greatly depending on the options available to the parties during the lease term and at the end of lease.

These considerations is the starting point for the analysis of lease vs. buy/borrow alternative.

2.2 Tax implications to leasing

Provided that leasing and borrowing implies the loan of funds, the logical question would be when it is more beneficial for the company to borrow money rather than to use a lease arrangement. In the situation when both companies (a potential lessee and lessor) have the same borrowing rates available, for example, both companies can borrow money from the bank “at prime” rate, there are no *interest rate benefits* that can be derived by the parties from the lease arrangement. On the one hand, the potential lessee in the descried situation would be able to borrow money “at prime” from the bank and finance 100% of the acquisition. On the other hand, the potential lessor in order to make a profit would lease the equipment to the lessee with the implied rate higher than prime. Thus, if there are no other benefits except for those associated with the borrowing rate implied in the lease payments, leasing would not be economically viable.

It was identified earlier that one of the differences between leasing and borrowing is the title to ownership of the asset. Indeed, the ownership of the asset also implies certain cost-related benefits that are primarily associated with the depreciation deductions for tax purposes and the “tax-shield effect”.

Tax benefits are the most cited reason for choosing leasing as a financing option. Even though the availability of these benefits will be examined in Chapter 3 in more detail, it is important to describe the general mechanism of how these tax benefits can be derived.

Tax-related benefits are directly dependent on the relevant tax legislation in a particular country or region. In this respect, it should be mentioned that academic literature regarding the tax effects on capital, and leasing in particular, is solely focused on the United States, and therefore, based on the US tax system regulations. This paper is aiming to add a European perspective to tax-related aspects of leasing.

Country	Percentage
Australia	30
Austria	25
Belgium	33
Denmark	22
Finland	20
France	34
Germany	16
Greece	29
Italy	24
Luxembourg	20
Netherlands	25
Norway	24
Poland	15
Portugal	28
Spain	25
Sweden	22
Switzerland	9
United Kingdom	19
United States	35

Table 1:Corporate tax rates Data extracted on 01 May 2017 09:18 UTC (GMT) from OECD.Stat

Generally, the companies are affected by taxes in direct and indirect way: directly - by *corporate income tax* and indirectly - by different *tax allowanced*, provided by the corporate tax code. Depending on the amount of taxable income, the company pays a certain percentage from this amount, which is a corporate income tax. In some countries, there can be a progressive tax system that implies different tax rates to be paid depending on the amount of taxable income. ***Table 1*** represents the current corporate tax rates in different countries.

The amount of taxable income is calculated by deducting all the allowable expenses from the company's revenue. These deductions also include depreciation and interest. *Depreciation deduction* (or allowance) is an important issue for an analysis of the lease contracts, as it is inextricably linked to the asset ownership, which is one of the aspects that draws a line between loan financing and lease financing.

"Depreciation is the systematic allocation of the cost of a capital asset over a period of time for financial reporting purposes, tax purposes or both." (Van Horne, 2005:21). Due to the fact that depreciation is allowed to be deducted from the company's revenue as an expense, it reduces the taxable income so that the amount of taxes payable for the period is decreased.

There are several depreciation methods that can be used by the company. Overall, these methods fall into one of the following categories: the straight-line depreciation or accelerated depreciation. Under the strait-line method, the cost of an asset is allocated evenly over an asset's useful life. For example, for an equipment worth of 2,000EUR and the useful life of 10years, yearly depreciation expense would be 200EUR, so that the residual value by the end of 10 years would be zero. In contrast to strait-line, there are different kinds of accelerated depreciation methods, such as a *declining-balance*

depreciation. This method implies annual allocation of expenses equal to a certain percentage from the Net Book Value of the asset (acquisition minus all accumulated depreciation). For example, for the same equipment worth of 2,000EUR, the yearly depreciation could be 30% of NBV, which is 600EUR (30%*2,000 EUR) depreciation expense in the first year, 420EUR (30%*(2,000-600)EUR) in the second year and so on.

	Machinery	***Buildings***
AUSTRIA	SL	SL
BELGIUM	SL/DB	SL/DB
DENMARK	DB	DB
FINLAND	DB	DB
FRANCE	SL/DB	SL
GERMANY	SL/DB	SL/DB
GREECE	SL	SL
IRELAND	SL/DB	SL
ITALY	SL	SL
LUXEMBOURG	SL/DB	SL/DB
NETHERLANDS	SL/DB	SL/DB
PORTUGAL	SL/DB	SL
SPAIN	SL/DB (3)	SL
SWEDEN	SL/DB	SL
UNITED KINGDOM	DB	SL

Table 2: depreciation methods for tax purposes
Source: Taxation in OECD countries, OECD, Paris, 1993 ; and European Taxation, Section A: Taxation of Corporations, IBFD, Amsterdam. 1997.

For the US-based companies Modified Accelerated Cost Recovery System (MACRS) is used. The system implies 200% declining balance (or double declining balance) method. The logic of the depreciation calculation is similar to the declining-balance depreciation described above, with the exception that a percentage of annual depreciation is calculated by dividing 2 by the useful life of an asset (2/10 or 20% in the described example). At some point in the asset's lifetime, the depreciation method is switched to straight-line.

Depending on the tax regulations, the accelerated depreciation method can be applied *for tax purposes*. In case there is a straight-line method used for *economic depreciation*, the differences between the calculations of economic depreciation and depreciation for tax purposes are created, resulting in a deferred tax liability. It should be noticed that these differences are temporary and can not be recognised as profit (or loss). In simple words, the company would pay a portion of a corporate income tax at a later period, resulting in the larger portion of after-tax income retained by the company in the beginning of depreciation cycle. This scheme, that can be thought of as redistribution of a company's tax burden over a period of time, is used to encourage particular capital investments, depending on the types of assets the accelerated depreciation is allowed for.

Table 2 presents different depreciation methods for tax purposes available in different countries. "SL" stand for straight-line depreciation, while "DB" stands for declining balance depreciation method.

Regardless of the method used in calculations and if the deferred tax liability/asset is created, depreciation reduces taxable income and, therefore, the amount of tax payable in particular period. The effect of depreciation deduction on net profit can be calculated by multiplying the corporate tax rate by the amount of depreciation allowance.

Table 3 below presents a hypothetical example that illustrates the differences that accelerated depreciation can have on the tax payable each year in comparison to straight-line method. On the one hand, the equipment worth of 20,000 EUR under the straight-line method is depreciated at 2,000 EUR per year causing 600 EUR reduction in the corporate tax payable. On the other hand, under declining balance method that is switched to a straight-line after 7 years, the depreciation expenses are increased in the first 3 years of depreciation cycle. This results in a greater reduction of tax payable in the beginning of the cycle. Even though the total amounts of tax reduction caused by depreciation are equal, the Present Value under Declining balance method is greater, which means that accelerated depreciation would be a preferred option for the company.

Asset book value	EUR 20,000
Useful life (years)	10
WACC	11%
%, DB depreciation	20%
Corporate tax rate	30%

Depreciation amount

Year	SL depreciation	DB depreciaiton
1	2,000	4,000
2	2,000	3,200
3	2,000	2,560
4	2,000	2,048
5	2,000	1,638
6	2,000	1,311
7	2,000	1,049
8	2,000	1,398
9	2,000	1,398
10	2,000	1,398
Total	EUR 20,000	EUR 20,000
PV	EUR 11,778	EUR 13,245

Effect on tax payable

Year	SL depreciation	DB depreciaiton
1	(600)	(1,200)
2	(600)	(960)
3	(600)	(768)
4	(600)	(614)
5	(600)	(492)
6	(600)	(393)
7	(600)	(315)
8	(600)	(419)
9	(600)	(419)
10	(600)	(419)
Total	(6,000)	(6,000)
PV	-EUR 3,534	-EUR 3,974

Table 3: Effect of depreciation methods on tax payable

It should be noticed that the depreciation allowance does not create the same effect that appears in the case of debt financing and interest expense deductions, as an alternative to equity financing; however, it still has an effect on the company's after-tax cost of capital.

In the context of leasing, there are two important questions that should be answered in regard to depreciation:

- How do the depreciation-related benefits fit into the lease arrangements?
- When these benefits are available?

A lease agreement, as any other agreement, is a viable option if there are benefits that are available to the one party but are not available to another one. In other words, if there is a tax disparity between the companies, for example, in corporate tax rates or in ability to apply accelerated depreciation method, than there is a ground for the lease arrangement to emerge.

In the situation when the company does not have enough taxable income to realise the effect of depreciation deductions, leasing the equipment instead of purchasing it could be an option, because the lessor having enough taxable income to realise accelerated depreciation benefits can convey part of those benefits to the lessee in a form of a lower lease payments.

Similar situation appears when companies have different effective corporate tax rates. In this case, lease contract can be the mechanism of redistribution of depreciation related tax benefits. The differences in effective rates may arise from, for example, Multinational Corporations being able to take advantage of their global presence and, consequently, lower tax rates. Another example would be companies subject to Alternative Minimum Tax (or ATM, refers to US companies).

In this way there are the following considerations to be made from the information presented above:

(1) There are tax-related benefits attributed to the asset ownership. These benefits are present in a form of depreciation deductions, particularly under accelerated depreciation schedule. Benefits vary greatly depending on the type of asset, relevant tax legislation and the availability of sufficient taxable income.
(2) Lease contract can be the mechanism that transfer tax-benefits from one company to another in a form of the lower lease payments. The availability of these benefits vary on case-to-case basis.

2.3 Types of leases

In order to assess the benefits that asset ownership can have for the companies as well as how the types of lease contracts influence the viability of leasing as a means of financing for a particular company, it is important to distinguish between different types of possible lease arrangements.

Academic textbooks give different classifications for lease contracts. For example, Van Horne in his “Fundamentals of Financial management” (Van Horne, 2015:559) classify leases into operating and finance on the basis of length of the lease term versus useful life of an asset as well as availability of purchase option at the end of the lease term. Financial leases are further classified into tree main forms: sale and leaseback arrangements, direct leasing and leveraged leasing.

Classifications of Contino, Richard (Contino, 2002:10) also classify leases into finance and operating, but consider other forms, e.g. net finance lease, leveraged lease, non-leveraged lease, as a descriptive types of lease, rather than a separate categories. The most detailed classification is given by Frank Fabozzi (Fabozzi, 2008: 531), who first makes a distinction between *Tax-oriented true leases* and *Nontax-oriented Leases* and then gives the further classifications of each type. It should be noted that the above-mentioned classifications does not contradict each other, but rather suggest a different scope of specification and hierarchy.

This paper suggests to classify leasing by the following characteristics:

1. By the amount of risk each party in lease arrangement is subject to;
2. By nature of a lease agreement:
3. By the number of parties involved;
4. By availability of tax-benefits

After the variations within each class of characteristics are examined, the comprehensive structure for leasing is created. The suggested approach to classifying leases is thought to be the most suitable for further analysis of leasing as a means of financing.

2.3.1 Finance and operating leases

Lease contract typically contain clauses that specify the lease term, availability of purchase option at the end of lease term and the party who is responsible for maintenance, insurance and service for the equipment. In other words, these clauses identify the party who bare the potential risks associated with the leased equipment.

For example, if the useful life of an asset is significantly longer than the lease term, than all risks associated with the residual value of an asset at the end of the lease period is bared by the lessor. In this situation, the lease is more likely to be cancellable, meaning that the lessee has the option to cancel the lease before the end of the lease term, and is classified as an ***operating lease***. Additionally, if there is an option to purchase an equipment at a price that is close to the fair market value at lease contract expiration than the lease is also likely to be classified as operating.

James Van Horne (Van Horne, 2005: 559) mentions leasing of copying machines, certain computer software and automobiles as the examples of operating leases. Talking about leasing of office space, buildings or land, it should be noted that land has an indefinite useful life, while the useful life for the building or office space is considerably longer than the one of any other assets. For this reason, Real estate leasing is usually classified as an operating lease.

On the contrary, if there is a fixed price purchase option at the end of the lease term and/or the asset useful life is close to the lease period, than the lease is referred to as *a* ***finance lease***. In other words, the more risks associated with the ownership of an asset goes to the lessee, the more likely the lease to be classified as a finance lease.

2.3.2 Sale & Leaseback arrangements and direct leases

When referring to the nature of the lease arrangements, it is important to understand the motives of different parties to enter into the agreement. *Under sale and leaseback agreements* the company sells the equipment to a party with a price equal to a fair market value and then leases it back. Under these circumstances, the company receives the price of an asset in cash and gives up a title to ownership of the asset. The motive behind this transaction could be the need for financing in a form of cash, which is very similar to a loan arrangement with the difference in title to ownership of the asset. This type of lease transactions is not particularly examined in this paper.

Direct leasing is the most common type and imply the lease of the equipment that was not previously owned by the company. Equipment manufacturers, independent leasing companies and other investors are the potential lessors in this case.

2.3.3 Leveraged and Single-investor Leases

Depending on a number of parties involved in lease arrangement the lease can be classified as leveraged or non-leveraged (single-investor lease). In a single investor lease transaction lessor provide 100% of funds to finance the acquisition of a particular equipment, so that there are two parties to the lease agreement.

In a leveraged lease the lessor make an equity investment in amount of 20-40% of the funds needed to acquire an asset, while the remaining 80-60% is provided by a long-term lender. The cost of borrowing in this case correspond to the credit rating of the lessee. In the described setting, lessor is referred to as an *equity participant* and remain being the owner of the equipment as in a single investor lease. The loan in this case is usually secured by the mortgage on the asset and the assignment of the lease and the lease payments (Van Horne, 2005:560). Leveraged leasing is most often used when it is necessary to finance big-ticket assets with economic life of more than 20 years.

It should be mentioned that from point of view of the lessee there are no particular differences between the two mentioned types of leasing. Thus, the analysis of lease vs. buy/borrow alternative would not be affected by the number of participants in lease transaction.

Cost of equipment	**EUR 90,000**
Period number	Lease payments
0	(EUR 90,000)
1	EUR 16,000
2	EUR 15,000
3	EUR 15,000
4	EUR 15,000
5	EUR 15,000
6	EUR 15,000
7	EUR 13,000
IRR	**4%**

Table 4: calculation of interest implied into the lease

Summarising the types of leases, mentioned above, it can be seen that due to variety of contract options available for the lease transaction, there are a number of classifications that can be used. It is not possible at this point to build a hierarchy of these classifications as, for example, direct lease can be a finance or operational lease, while classifying the lease a direct lease would not define the number of parties involved in the agreement.

2.3.4 Tax-oriented true leases vs. non-tax oriented leases

The classification of tax-oriented leases and non-tax oriented leases offered by Frank Fabozzi (Fabozzi,2008:533) reflects the necessity to distinguish between those leases oriented on cost-saving from tax-related benefits (or depreciation-related benefits as was identified earlier) from conditional sale leases that are basically the way of purchasing the equipment.

Conditional sale leases or non-tax oriented leases imply the transfer of asset ownership at the end of the lease term. In essence, the main motive for such lease agreement is the equipment purchase. A lease in this case is viewed as a debt contract with an interest rate implied into the lease payments.

Table 4 shows the calculation of such interest for hypothetical example of the lease arrangement with lease payments made each period. The interest rate payable be the lessee is found by calculating the return (IRR – internal rate of return) for the lessor. In this situation, the cost paid for the equipment would be the cash outflow for the lessor, while lease payments are the cash inflows. Using the IRR function in Excel, the rate of return and therefore the interest rate implied into the lease if found.

In contrast to a true (or tax-oriented) lease, tax-benefits that goes along with asset ownership are not possible in this kind of arrangement, because tax authorities usually recognise such a transactions and the lessee has to put an asset on its balance-sheet and depreciate the over shorter of useful life and the lease term.

Conclusion to section 2.3

In this way, all the descried classifications view leases from the perspective of different characteristics of the lease agreement. The existence of different classifications underlines the fact that the lease contracts vary depending on case-to-case basis. However, there are a few considerations to be made:

(1) *Conditional sale leases* are usually *single-investor leases* due to the fact that such arrangements imply a sales deal, where there are normally two parties involved: a buyer and a seller;

(2) *True leases* can be both: leveraged or single-investor deals. Moreover, the leveraged form of a true lease is thought to be the ultimate form of lease financing (Fabozzi,2008:534). Presumably, the combination of debt and equity in leveraged leases results in higher returns for the lessor due to the tax-shield effect available when debt is involved compared to the situation of 100% equity investment.

(3) *Financial/Operating lease* classification is often used for financial accounting purposes and is similar to conditional sale/true lease classification. Thus, a financial lease is likely to be a non-tax oriented lease, while operating leases are usually true leases as in this case the lessee does not recognise the leased equipment on its balance sheet and therefore the ownership remains with the

lessor who can convey the tax-related benefit to the lessee in a form of lover lease payments. Accounting for leases is described in chapter 4 in more detail.

Table 5 below summarises the types of leases discussed in this paper:

Characteristic of lease arrangement	**Type of lease**
Distribution of risk between the parties	Finance *vs* operating leases
Nature of the arrangement	Sale & leaseback arrangements *vs* direct leasing
Number of parties involved	Leveraged *vs* non-leveraged
Tax treatment	Tax-oriented (true) lease vs. non-tax oriented leases

Table 5: Types of leases

The understanding of lease classifications helps to assess different lease contracts from the point of availability of different benefits in the agreement.

2.4 Conclusion to Chapter 2

On the one hand, leasing as an alternative to purchasing using borrowed funds is a financing option that can bring benefits for the company by conveying tax-related benefits that would not otherwise be available.

On other hand, in case of non-tax oriented deal, lease contract is viewed as a form of purchasing the equipment and can, for example, be an effective marketing tool for the equipment manufacturer to promote its products, especially when there are different interest rates available to the parties or the lessee does not have a sufficient access to bank financing.

Finally, in a case of a service lease (in contrast to net lease), the lessee might seek benefits related to equipment maintenance and service rather than its cost to the company.

3 Economic rationale for leasing

3.1 Techniques of lease analysis

From 1950s, the time leasing began to emerge, there has been a long discusison over different aspects of leasing. Due to the complexity of the lease mechanics in respect to tax-realted benefits and many other practical issues, the aspects discussed in academic literature vary grately from the type of company's decision invoved to the valuation techniches to be used.

The first step to lease assessment from the economic viewpoint is the understanding of weather finacing or cabital budgeting desicion is involved. During the times of Anderson and Martin's Survey (1977) leasing was viewed as capital budgeting decision, which is, by definition, the determination of viability of investment into the long-lived assets (Eitman, EM-29: 2007). Capital-budgeting analysis generally involves the assessment of the future cash flows from the potential investment. Regardless of whether Net Present Value (NPV), Internal Rate of Return (IRR) method or payback period is used, the calculations imply a certain cost of capital as a discount rate. This rate usually does not account for the after-tax effect of depreciation deductions, as the cost of financing has already been defined. Thus, treating leasing as a capital budgeting decision not only is wrong, but places it in disadvantage position, as the wrong discount rate is then used for valuing leasing alternative.

Indeed, in the results of Anderson's and Martin's survey the "bias in favour of the purchase alternative" is mentioned. The reason for this bias mentioned in the survey is failure to adjust for different risk elements in the decision (Anderson, Martin, 43: 1977).

The more recent Survey was conducted by Thomas O'Brien and Bennie Nunnally in 1982. By that time, the question of whether leasing involves a financing or capital budgeting decision was still ongoing; however, the preference was given to "financing" option. Therefore, the further debate centred on when the lease vs. buy/borrow analysis should be performed and what method should be used in calculations of Net Advantage to Leasing (NAL) in comparison to purchase option. The survey constituted a problem that NAL analysis in mistakenly made only if the capital budgeting approach gave positive results.

Even though, the further research did not make any particular statement about the issue, NAL analysis is generally thought to be conducted separately regardless on whether the project has been approved on the capital budgeting stage.

In respect to methods of the analysis, the academic literature distinguish between three alternatives in order to assess a Net Advantage to Leasing:

- Net Present Value or NPV of leasing;
- Internal rate of Return or IRR of leasing;
- Equivalent loan analysis;

The NPV calculation method has gained a particular attention in the academic literature sources. This analysis involves a series of complex calculations, as there are a lot of variables to account for. However, in essence, the idea of valuation remains the same as in any other NPV calculations, so that the present value of the cash flows is found.

Most of the authors were consistent in giving the formula for NPV of leasing calculations. In this way, Brearey & Mayers (1988), Brigham & Gapenski (1980), Ross, Westerfield & Jaffe (1990) included the following parameters in their calculations:

- Cost of the asset;
- Present value of the after-tax lease payments;
- Present value of the lost depreciation tax-shield;

In other words, the simplified version of the formula is

$$\textbf{NPV of leasing} = (Cost\ of\ the\ asset) - (PV\ of\ after\ tax\ lease\ payments) - (PV\ of\ lost\ depreciation\ tax\ shield)$$

The positive net present value in this case would indicate the economic viability of the lease alternative, however, would not provide the company with a complete picture, as the formula does include some important parameters.

Van Horne (1989) made some adjustments to the formula based on the need for more accurate comparison to a debt alternative and added the following parameters into the calculation:

- Present value of the loan payment, provided that a loan equals to the cost of an asset;
- Present value of an interest tax-shield;

The formula for NPV calculation in this case is:

$$\textbf{PV of leasing} = (PV\ of\ loan\ payments) - (PV\ of\ interest\ tax\ shield) - (PV\ of\ after\ tax\ lease\ payments) - (PV\ of\ lost\ depreciation\ tax\ shield)$$

This formula is suggested to provide a company with more accurate calculations, as it also accounts for interest tax-shield, which is an important aspect of debt financing that should not been neglected.

Another question that is directly connected to lease valuation is the discount rate to be used in NAL calculations. Despite the fact there has been a long academic discussion concerning this issue, all of the authors mentioned above use an *after-tax cost of debt* as a discount factor for present value calculations.

In regard to other methods of analysis, Internal Rate of Return and the equivalent loan concepts can also be viewed as useful options for lease valuation. The former implies the discount rate to be kept as unknown, which might be viewed as an advantage by some. However, the complexity of IRR calculations should be bared in mind. The latter implies the construction of an equivalent loan, which means that “net cash flows of the two financing alternatives [leasing and borrowing] are equivalent” (Fabozzi:2008) and further comparison of present values of each.

The method of calculation NPV as technique for lease valuation is cited more frequently than any other methods. For this reason, it is examined in the next section in more detail.

3.2 Lease valuation example: NPV for leasing

In order to get a realistic view on lease valuation let’s assume a hypothertical example of lease and then assess its viability as a financing alternative using NPV calculations. It is assumed that a lease in the example is a ”true lease”, which means that the lesse can deduct full lease paymetns as an expense while the lessor retains the tax benefits assosiated with depreciation deductions.

Case description:

Lease type	***True Lease***
Cost of the Equipment	EUR 60,000
Lease term (years)	5
Lease payments (annual)	14,000
Cost of borrowing	10%
Corporate tax rate	40%
After tax cost of debt	6%

Table 6: Case summary

The company is considering to lease an equipment worth of 60,000 EUR for the period of 5 years and annual lease payments of 14,000 EUR. If the asset is owned, it is depreciated 40% declining balance over the period of 5 years and has a residual value of 1,555EUR. The company subject to 40% corporate tax rate and 10% cost of borrowing, therefore the after-tax cost of debt equals 6% = 10%*(1-40%).

40% DB		
Year	Depreciation	Net Book Value
1	24,000	36,000
2	14,400	21,600
3	8,640	12,960
4	5,184	7,776
5	3,110	4,666
Residual value		**1,555**

Table 7: Depreciaiton for the asset

Table 7 presents the depreciaiton deductions to be made each year under the chosen depreciation method in the situation when asset is purchased. If the asset is leased, lost depreciation tax-shield, for each period equals corporate tax rate times the depreciation for the period.

Solution to case problem:

In order to compute Net Present Value for leasing, the cash flows for each period must be found and then discounted at a discount rate equals the after-tax cost of bebt, which is 6% in this case. The Cash flows for the period are comprised from lease payments, tax-sheild from the lease payments and lost depreciation tax-shield. Cost of the machine and its residual value are included as cash inflow and cash outflow accordingly in the respective periods.

NPV of leasing	**1,674**					
	0	**1**	**2**	**3**	**4**	**5**
Cost of the machine	60,000					
Lease payments	(14,000)	(14,000)	(14,000)	(14,000)	(14,000)	
Tax-shield from lease payments	5,600	5,600	5,600	5,600	5,600	
Lost depreciation tax-shield		(9,600)	(5,760)	(3,456)	(2,074)	(1,244)
Lost residual value						(1,555)
Total	**51,600**	**(18,000)**	**(14,160)**	**(11,856)**	**(10,474)**	**(2,799)**
NPV of cash flows	51,600	(16,981)	(12,602)	(9,955)	(8,296)	(2,092)

Table 8: Cash flows from leasing

In Table 8, the calulations for every cash flow include:

- *Lease payment*, specified in the lease contract;
- *Tax-shield from the lease payment*, equal to the lease payment multiplied by the corporate tax rate, the company is subject to;
- *Lost depreciation tax-shield*, calcilated by the depresiation allowance (see Table 7) times the corporate tax rate;

The NPV of leasing analysis gave positive results, which means it would be viable for the company to choose leasing as a financing alternative.

It can be seen that the change in corporate tax rate, have an influence on two out of three main variables, which is the tax shield from lease payment and lost depreciation shield. Moreover, the depreciaiton tax-shied is directly dependent on the tax depreciation method allowed under the local policies.

Thus, in case any of this charactersistics change, the whole analysis is affected. For this reason, it is difficult to make any generalized statments about the viablity of lease

finaincing for all companies, due to the fact that a lot is dependant of the lease contract terms, local tax regulations and the type of the leased equipment. The borrowing rate avaliable for the lesse also palys a big role, which is reflected in the analysis.

Refering to a presented examle, it can be noticed that the anlysis does not include the influence of the lost interest rate tax-shield, which appears in the situation of debt financing. This fact makes the analysis less realistic. Moreover, it also pays no attention to the timing of lease and loan payments that can also have an effect on the comparison, because as a general rule, the lease payment are made in the begining of each period, meaning that the *pre-payments* are made each year. The loan payments and the accumalated interest, on the other had, would be payable in the end of each period.

In order to account for the above-mentioned factors, let's conduct another analysis based on "equivalent loan technique" and only then make a final statement about the economic viability of leasing in the described example.

3.3 Lease valuation example: equivalent loan analysis

Period	Cash flow
0	(60,000)
1	15,828
2	15,828
3	15,828
4	15,828
5	15,828
IRR	10.00%

Table 9: loan payments

Assuming that leasing characteristics as well as the company's tax and borrowing rates remain the same, for the purposes of the analysis it is necessary to construct an equivalent loan, equal to 60,000 EUR (the cost of an asset), with equal annual payments and the interest rate of 10% (the company's borrowing rate).

The first step is to determine the amount payable in each period in case of the debt alternative. Using trial-and-errors method, the amount payable each period, that would bring a return of 10% to the lender, is found. It is illustrated by *Table 9*. A part of each annually made payment would be considered as an interest rate on the outstanding liability, the remaining part – as a loan repayment. In this way, the amount of interest payable each year can be found (see Table 10).

	Interest	Loan repayment	Outstanding liability
1	6,000	9,828	50,172
2	5,017	10,811	39,361
3	3,936	11,892	27,469
4	2,747	13,081	14,388
5	1,439	14,388	0
Total	19,139	60,000	

Table 10: interst payable each period

The second step would be to determine the total cash outflows for debt and lease alternatives. The following assumptions are bared in mind:

- The loan payments are made at the end of each period, while the lease payments - in the beginning of each period;
- Prepaid expenses are not deductible for tax purposes, therefore, tax-shield effect does not appear in the year the first lease payment is made;
- The residual value should be taken into consideration when calculating the cash outflows from borrowing.

Table 11 presents the calculation of the total value of cash outflow for the borrowing

CF from borrowing	Loan payment	Interest	Depreciaiton	Tax-shield	Cash outflow (after taxes)	Present value of Cash Flow
0	-	-	-	-	-	-
1	15,828	6,000	24,000	12,000	3,828	**3,611**
2	15,828	5,017	14,400	7,767	8,061	**7,174**
3	15,828	3,936	8,640	5,030	10,798	**9,066**
4	15,828	2,747	5,184	3,172	12,656	**10,024**
5	15,828	1,439	3,110	1,820	14,008	**10,468**
Residual value	(1,555)			(622)	(933)	**(697)**
				PV of loan alternative		**39,647**

Table 11: PV of borrowing

alternative:

Tax-shield in this case is calculated by multiplying the sum of tax-deductible expenses (interest and depreciation) by the corporate tax rate. For example, the tax-shield in the first year would equal 6,000 EUR plus 24,000 EUR times 40% and equals 12,000 EUR. The total amount of cash outflow is found by deducting 12,000 EUR from the loan payment and so on for each subsequent period. The present value of all after-tax cash outflows is then found. For the borrowing alternative it equals ***39,647 EUR***.

The final step is to calculate the present value of after-tax cash outflows for lease option. Table 12 presents these calculations. The tax-shield effect in this case is calculated as the amount of lease payment multiplied by the corporate tax rate (40%).

CF from leasing	Lease payment	Tax-shield	Cash outflow (after taxes)	Present value of Cash Flow
0	14,000			**14,000**
1	14,000	5,600	8,400	**7,925**
2	14,000	5,600	8,400	**7,476**
3	14,000	5,600	8,400	**7,053**
4	14,000	5,600	8,400	**6,654**
5		5,600	(5,600)	**(4,185)**
				38,922

Table 12: PV of leasing

It can be seen that Present value of after-tax *cash outflows* for leasing alternative equals 38,922 EUR, which is less than for the loan option by **724 EUR.** This means that leasing would be preferable for the company.

It should be noted, that according to equivalent loan analysis the benefit of leasing, though obvious, are less than those showed by the NPV method. This difference is explained by the interest rate tax-shield and the timing of loan payments taken into consideratin under the equivalent loan technique.

3.4 Conclusion to Chapter 3

This chapter was dedicated to the valuation of true leases that can be viewed as an ultimate form of equipment financing. The valuation of non-tax oriented leases or the conditional sale contracts is not relevant in this case, as there are other implications to such transaction. The closer look on the lease valuation techniques proved the initial hypothesis that leasing contracts vary on case-to-case basis, so the analysis of its viability should be conducted separately in every particular case.

Under an equivalent loan method one should compute the present value of cash outflows from leasing and loan alternative separately and then compare the results, choosing the option with the lower present value of after-tax cash outflows. This method can be more attractive for some than an NPV technique as it implies the visual comparison between the two options and helps for account for different risk factors more accurately.

4 Accounting for leases

Depending on the country, there are different accounting standards that prescribe the principles to be used for recognising the lease transaction in the companies' Financial Statements. Usually such standards separately specify the relevant policies that apply for the lessee and the lessor.

In this way, the relevant accounting standards for the United Stated would be the US GAAP. More specifically, Statement of Financial Accounting Standards No. 13 (or FAS13) gives a detailed guidance for recognising lease transaction in Financial Statements of the lessors and the lessees. US accounting regulations concerning leases can be thought of being the most advanced among the existing regulations as they specify the relevant policies for most of the lease types including Leveraged leases, Leases between related parties and leasing involving Real Estate, as well as gives specific practical examples of Lease Standards applications. The fact that US standards for leasing has developed faster than anywhere else is justified by the rapid development of the lease market in the United States.

Referring to the European Union, even though there might be differences in local standards (e.g. HGB standards are applicable specifically for German companies), International Financial Reporting Standards (or IFRSs) are adopted for use in all member states. IAS 17 (International Accounting Standard 17) issued by International Accounting Standard Board (IASB) regulates accounting for leases in the EU. IAS 17 is viewed in detail further in this paper.

4.1 Examination of relevant accounting standard: IAS17

This section is aiming to provide the reader with the summarised version of the relevant accounting policies concerning lease contracts in the European Union and countries that have adopted IFRS as their national GAAP.

First of all, it is important the identify the scope of IAS 17. The following definition of *lease* is given by the standard:

> *"A lease is an agreement whereby the lessor conveys to the lessee in return for a payment or series of payments the right to use an asset for an agreed period of time"*

In this way, all the agreements that fall under this definition is subject to the application of the standard. Exception is made for Investment Property, which is the real estate

kept for the purposes of earning a return, so that IAS 17 does not cover most of the contracts for rent of buildings or land. Biological assets are also excluded from the scope of standard application. Additionally, some licencing agreements and lease contracts for exploration of non-regenerative resources are not subject to IAS 17.

The standard further classify leases into Finance and Operational. As was described previously, the difference between the types lies within the amount of risk bared by the parties. In case when the risk incidental to asset ownership is transferred to the lessee, the lease is classified as a finance lease. Otherwise, it is as operational lease.

Even though there are no strict borders for classification of lease as finance or operational, the standard gives some guidelines in this respect. For example, the following factors normally lead to classification of finance lease:

- The ownership is transferred to the lessee by the end of the lease term;
- There is a purchase option with a price lower than market value at the end of the lease term;
- Lease period is close to the economic life of an asset;
- An asset is highly specialised in nature;

It should be mentioned, that the above-mentioned examples is not a complete list of factors that could result in lease to be classified as finance lease. If a lease cannot be classified as finance, it is treated as operational.

Accounting for operational leases

From the perspective of the lessee, operating leases are the easiest to account for, as the standard merely prescribe to recognise lease payments as an expense in every respective period. The only aspect to consider is the disclosure of non-cancellable leases in the Notes to the company's Financial Statements, required by IFRS 7.

On the contrary, the lessor recognises the leased asset on its balance sheet and depreciates it in accordance with the relevant regulations (IAS 16 and IAS 38).

Accounting for finance leases

Unlike in case of operational leasing, finance leases imply the recognition of the leased asset at Fair Value on the lessee's balance sheet. Then an asset is depreciated by the lessee as owned. Due to the fact that this transaction is, in essence, treated as a loan with an interest rate equal the one implicit into the lease, the lease payments are split

between finance expense and the reduction of a respective liability. In other words, a part of a lease payment is treated as interest and the remaining part - as loan repayment.

At the same time, the lessor records a finance lease transaction as a receivable. The example of how the finance lease transaction is presented in the Financial Statements of the lessors and the lessees is presented in the next section.

IAS 17 also mentions sale and leaseback transactions that are treated differently depending on its further classification as finance or operational lease.

4.2 Financial reporting for finance leases: practical example

Useful life (years)	5
Purchace price	EUR 5,000
Prepayment	EUR 700

Month	Cash flows (lessor)
0	*(4,300)*
1	350
2	350
3	350
4	350
5	350
6	350
7	350
8	350
9	350
10	350
11	350
12	350
13	350
IRR	**10%**

Table 13: IRR of lease

Example 1: accounting for finance lease

Let's asume there is a lease contract between an equipment manufacturer and a company. It contains a fixed-price purchase option at the end of the lease term. All the costs associated with maintanenece and repairment of the equipment during the lease period is bared by the lesse. The begining of the lease term is 1 January 2016, the end of the lease term is 1 February 2017. Equipment costs 5,000 EUR and has a useful life of 5 years. The lease payments in amount of 350 EUR are due on the first day of each month. There is also a prepaiment to be made by the lessee before the begining of the lease term in amount of 700 EUR. According to IAS 17 such contract meets the criteria for a finance lease, so there is a need in calculating the interest rated implied into the lease.

Because there is a prepayment required, the initial cash outflow for the lessor would be the cost of purchase minus the prepayment. So the amount of (4,300) EUR is included into the rate of return calculations. The described lease implies 10% (or 0.82% monthly interest) rate of return for the lessor or 10% yearly interest for the lessee. Thus, at the inception of a lease the lessee would recognise the transactions as follows:

Balance Sheet	
Fixed assets	
PP&E	5,000
Cuurent liabilities	
Short-term portion of a long-term debt	3,953
Long-term liabilities	
Debt	347

Table 14: Lessee's Balance Sheet

Thoughout the lease term, the lesse should recognise interst paid on outstanding liability as an expense the following way:

Month	Outstanding liability in the beginning of the period	Lease payment , exl. VAT	Interest expence	Loan repaiment	Outstanding liability at the end of the period
Prepayment	*5,000*	*700*		*700*	4,300
1	4,300	350	35	315	3,985
2	3,985	350	33	317	3,668
3	3,668	350	30	320	3,348
4	3,348	350	27	323	3,025
5	3,025	350	25	325	2,700
6	2,700	350	22	328	2,372
7	2,372	350	19	331	2,041
8	2,041	350	17	333	1,708
9	1,708	350	14	336	1,372
10	1,372	350	11	339	1,033
11	1,033	350	8	342	692
12	692	350	6	344	347
13	347	350	3	347	(0)
Total		**5,250**	**250**	**5,000**	

Table 15: Monthy interest payable

The amount of interest incurred every month would equal outstanding liability in the begining of the period multiplied by monthy interest rate (0.82%). For the the first month it would be 4,300*0.82% or approximately 35 EUR interest, which means that 315 EUR goes for the loan repayment (350 EUR in total for the month). The amount of outstanding liability at the end of the first month is calculated by deducting 315 EUR from 4,300 EUR and equals 3,985 EUR. Interest incurred in the second month of the lease would be calculated as 3,985 EUR multiplied by monthy interest rate and so on. At the end of the lease term the amount of outstanding liability would equal zero.

In this way, the amount of the interst incured in the first year would equal 247EUR. After 12 months the asset is depreciated on a stratit-line basis, so that the Net Book Value on the 1 January 2017 would be 4,000 EUR (5,000 minus accumulated depreciation). Thus, on the 1 January 2017, lease transaction would be recogised by the lessee as follows:

Profit and loss statement (P/L)	
Interest expense (for the year)	247
Depreciation expence (for the year)	1,000
Balance Sheet (B/S)	
Fixed assets (PP&E)	4,000
Short-term debt	347

Table 16: Lessee's Balance sheet and Income Statement

In this way, by 1 February 2017 the whole debt recognized would be written-off, while the title to ownership of an asset would be transfered to the lessee.

The example of operating lease accounting is not given as it simply implies the expense in the amount of full lease payment incurred each period. Such a transaction does not affet the company's balance sheet.

4.3 Effects of lease classification on the company's financial statements

Off-balance-sheet financing was very often cited as an advantage to leasing (Contino, 2002:14), however, as can be seen from the previous section, is no longer available. In the past, companies used leasing for the purposes of purchasing the equipment without recognising it as a long-term debt. They simply expensed the rent payments each period, so that every lease was accounted for as an operational. It should be mentioned that in some countries it is still possible to treat leasing this way. For example, in Russian Accounting Standards (RAS), there are no guidelines for finance lease accounting, therefore, these transactions are not treated as debt nor the asset is recognised on the lessee's balance sheet.

Going back to the IFRSs, that lease transactions are recognised differently in the lessee's (and lessor's) Financial Statements depending on lease classification. Since such effects can be viewed by the company as an advantage or a drawback, there is a need for a closer look on the situation.

As previously discussed, finance leases are recorded as assets and liabilities on the lessee's balance sheet. It means that the recognition of such transactions is identical to debt financing. On the contrary, operating lease transactions do not have an effect on the lessee's balance sheet. This means that to a certain extent there is still an "off-balance-sheet financing" benefit available. As the company generates income by using leased equipment it does not recognise this equipment as an asset, therefore, boosting its ROA (Return On Assets) ratio when comparing to borrow alternative.

4.4 Conclusion to Chapter 4

Depending on the local accounting policies, there can be different treatment of lease contract. However, in developed countries, finance lease transactions (or conditional sale contracts) are recognised as debt and treated accordingly, therefore, eliminating the off-balace-sheet financing benefit. Except for the discrosure, finance lease would have the same effects on the company's balance that a similar loan transaction wpuld have. However, it would certainly not affect the company's credit capacity the the same way.

Due to the fact that under operating leases the ownership remains with the lessor, such transactions are easy to account for. At the same time, the lessee can enjoy all the benefits that are normally associated with leasing.

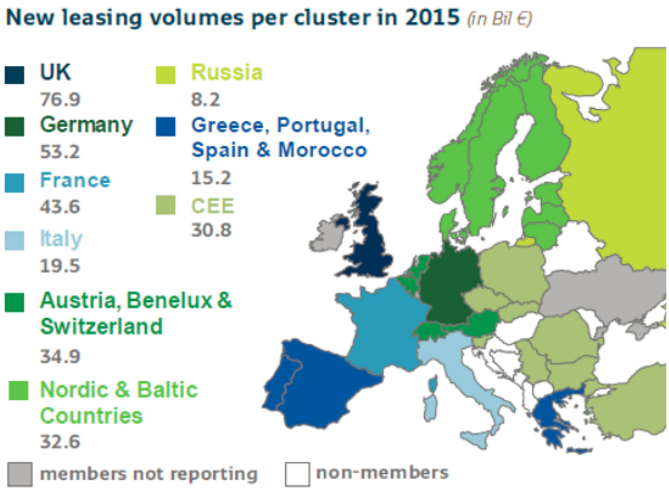
5 Current market data

The lease valuation technics, accounting as well as differences between various types of lease arrangements have been examined in the previous chapters of this paper. While the advantages of operating “true” leases have the economic foundation in regard to tax-shield benefits, conditional sale contract or financial leases is a direct equivalent to purchasing and should be considered as an option only if the interest rated implied in such lease is lower than the companies cost of debt. Nevertheless, the attractiveness of leasing lies not only within its economic advantages, that sometimes are difficult to assess, but also within the practical aspects to it.

Chapter 5 is the final chapter and is aiming to add a practical perspective to lease assessment. Firstly, the dynamics of the European Leasing market will be considered. Secondly, the specific examples of leasing propositions will be given. Finally, the conclusion regarding the practical aspect of leasing will be made.

5.1 Dynamics of European leasing market

Leaseurope is a European Leasing Assosiation[1] founded in 1972 that is an umbrela body for local Leasing assiciations in Europe. It provides quartaly reports on the state of the leasing market in Europe. The table below represents a recent statistics provided by Assosiation about new leasing volumes per cluster in billion Euro in 2015.



Graph 1: new leasing volumes in 2015
Source: Leaseurope 2015 Annual Statistical survey

The UK and Germany are the leaders among the European countries by the amount of new equipment in 2015 financed by the means of leasing.

For comparison purposes, the corporate tax rates in these countries are 19% and 16% accordingly. Straight-line depreciaiton is used for tax purposes in Germany and Reducing Balance in the Unided Kingdom.

[1] http://www.leaseurope.org/

Thus, it is difficult to identify any correlations. In addition, one should also account for the total amount of equipment investments made in a particular countrly. In this way, the the new leasing volumes statistics reflects the aptitude of equipment markets rather than the attractiveness of lease financing in European countries in general. Eurostat[2] statistics also does not dispose any up-to-date statisticst that would be relevant for factor analysis.

Neverhteless, the data provided by Leaseurope Association can be used for the assessment of the state of leasing industry as well as the dynamics of the market in general. **Table 17** below is based on the summarised data provided by Leaseurope yearly reports and shows the percentage change *in amount of new lease volumes* per cluster.

	2013	2014	2015
UK	9%	25%	26%
Germany	4%	6%	7%
France	-4%	7%	8%
Italy	-11%	9%	8%
Austria, Benelux & Switzerland	-6%	5%	16%
Nordic & Baltic Countries	0%	5%	8%
Russia	-6%	-26%	-40%
Greece, Portugal, Spain & Moorocco	-13%	43%	18%

Table 17: Change in New Leasing volumes

The analysis shows an overall increase in new volumes with the UK being the leader in respect to the growth rates in 2014 and 2015. Germany shows consistent, but modest growth rates in comparison to the UK and other countries.

In this way, there are the following considerations to be made in respect to dynamics of the European Leasing market:

(1) European market is too heterogeneous for making a generalised conclusion on whether the tax-benefits and corporate tax rates contribute to the development of the leasing industry. Additionally, there is no up-to-date statistics for a proper factor analysis;

(2) Consistent growth in new leasing volumes, especially in some countries, proves its viability as a means of financing the equipment.

[2] http://ec.europa.eu/eurostat

5.2 Prospective lessees and lessors

The final puzzle in a mosaik of ”leasing problem” is the understanding of who are the potential lessees and lessors and what they have to offer to each other. Any equipment user can be a potential lessee. This means that the range of prospective lesses varies from individuals to large multinational corporations.

In regard to the potential lessors, they generally fall in one out of five categories: individuals, independent leasing companies, lease brokers, captive leasing companies and banks (Contino,4:2002).

Independent leasing companies can be further calssified into *Financial leasing companies* and *Service Leasing companies*. The former usually imply companies whose main specialisation is *finance lease* contracts, which means that the new equipment is bought from the manufacturer by financial leasing company and simultaneously leased to an equipment user for the period that is close to its useful life. The latter, on the other hand, are concerned with service lease contracts and offer maintenance services in addition to financing the equipment itself. Normally, the lease term in this case is shorter than an assets useful life, which means that dealer should re-lease the equipment once the lease term is finished.

Another source of finance lease contracts are the banks, for whom lease financing is similar to their ordinary lending programs.

As for lease brokers, they usually offer assistance in setting a lease contract as well as finding the relevant lessor for the deal. These services can be particularly useful when a lease is not a single-investor transaction, but a leveraged lease, as it can be highly complicated in terms of documentation.

Finally, captive leasing companies are the subsidiaries of the equipment manutactu-rers. These subsidiaries are set up in order to provide financing for the customers and usually offer lower interest rates as the most profit is derived not from the leasing itself, but from the sale of a product. For this reason, captive leasing companies can afford a lease contract with lower margin than an independent leasing companies. A good example is *Volkswagen Leasing GmbH*, which is the third in a ranking of the European Leasing companies in 2015 by the amount of new business within Europe (13,9 billion EUR).

Among the companies that provide lease financing to their customers are IBM, Hewlett-Packard and many others. The advantages cited by these companies when marketing

this type of financing are cost reductions, minimization of risk of obscolescence and disposal, improved cash flow.

Top-20 of European lessors include Société Générale Equipment Finance (1st), Nordea Finance (9th), Siemens Financial Services GmbH (16th) and Raiffeisen Leasing (17th).

5.3 Conclusion to Chapter 5

The European leasing market has been growing considerably over the past several years. The market is presented by all categories of participants including independent leasing companies and banks, who are the main providers of financial leasing solutions, as well as the captive leasing companies, who are the equipment manufacturers willing to promote the sale of their products by offering operating and finance lease contracts.

In this way, the sources of benefits vary depending on the category of the lessor:

(1) *Banks and finance* leasing companies treat leasing as an alternative financial instrument that brings a return, depending on the risks involved. These risks are usually associated with the residual value of the leased asset at the end of the lease term.

(2) *Service leasing companies* benefit from leasing an equipment several times during its useful life. Additionally, a higher lease payments are received as compensation for provided maintenance as well as for the risk of obsolescence that is bared by the lessor.

(3) *Captive leasing companies* pass over the benefits to their parent companies in a form of higher sales volumes and marketing of their products.

6 Conclusion

Asset management and asset financing, as the means of value creation, are the key elements to profit maximization. Therefore, financing desicions that go along with capital budgeting (or investments) decisions play an important role in a comany's success and have a direct impact on profitability.

Leasing is one of the alternatives of asset financing that is most often compared to purchasing an asset using borrowed funds. The principle difference between the two options is the title to ownership of an asset that in a case of leasing is not tranfered to the equipment user. Depending on the type of lease contract the benefits assosiated with the equipment ownership are avaliable to the parties. Additionally, equipment maintenance services can be provided, which is a considerable advantage in some cases.

The first step for the company in assesment of leasing as a financing alternative is the understanding of the company's true needs as well as the amount and kind of risks it is willing to take on:

- *Cancelable (operating) leases* would be the means of eliminating the risk of obsolescence, as there is an option for the company to terminate an existing lease contracs and get a new one for an uptodate equipment;
- *Service leases* are useful in case there is a need for maintenance services that a company is not willing to proceed in-house;
- *Financial leases c*an offer a cost saving advantage or be a source of more flexible financing, as the the lessor might be more flexible in respect negotiating the timing of the lease payments;
- *Operating lease* generally can provide a cheaper financing, as there can be tax-benefits avaliablale to the lessor that can be conveyed to the lessee in a form of lower lease payments

It is not an exhausive list of lease types and their advantages, as lease contracts can be highly tailored to organisational needs, for example, in regard to timing of payments, and therefore, offer some additional benefits.

The drawbacks of leasing, on the other hand, include difficulties in its valuation and accounting, as it requires not only the knowledge of the local standards and policies, but also the choice of the relevant valuation technique. However, the market dynamics shows that leasing proved to be viable equipment financing alternative.

In this way, while some assume that the principal reason for leasing to exist is the possibility to derive different cost benefits from owning an asset, in reality leasing is more that just financing vehicle. As was described earlier, apart from exploiting the tax benefits, companies can use leasing to promote the sales of their products and in this way secure their receivable portfolios. Benefits of leasing vary greatly depending on the company, the type of lease and leased asset, however, as a general rule “firms have found financing their product via leasing a highly profitable business”(Fabozzi, 2008: 531). The company examples include, but not limited to IBM, Hewlett-Packard, Cisco, Volkswagen and many others.

List of References

1. Anderson, Paul; Martin, John. **Lease vs. Purchase decision: a survey of current practice.** Financial Management 6 (Spring 1977), 41-48
2. Bierman, Harold. **Buy versus Lease with an alternative minimum tax**. Financial Management 17 (Winter 1988), 87-91
3. Brealey, Richard; Myers, Stewart. **Principles of Corporate Finance**. New York, McGraw-Hill, 1998.
4. Brigham, Eugene;Gapensi, Louis**. Intermediate Financial Management**. Chicago, The Dryden Press, 1980.
5. Contino, Richard M. **Complete Equipment-Leasing Handbook: A Deal Maker's Guide with Forms, Checklists and Worksheets.** Saranac Lake, US: AMACOM Books, 2002. ProQuest ebrary. Web. 2 October 2016.
6. Eiteman, David; Stonehill, Arthur & Moffett, Michael. **Multinational business finance**. Boston, MA, Pearson/Addison-Wesley. 2007
7. Fabozzi, FJ, Peterson, DP, & Polimeni, RS 2008, **Complete CFO Handbook : From Accounting to Accountability** (4), Wiley, Hoboken, US. Available from: ProQuest ebrary. [14 September 2016].
8. O'Brien, Thomas; Nunnally, Bennie. **A 1982 Survey of Corporate Leasing Analysis.** Financial management 12 (Summer 1983), 30-37
9. Roger L. Cason. **Leasing, Asset lives and uncertainty: A practitioner's comments**. Financial Management 16 (Summer 1987), 13-16
10. Westerfield Ross. S.; Jaffe, Jeffrey. **Corporate Finance**. Homewood, IL, Irwin, 1990.
11. Ryan, Stephen G. **Financial Instruments and Institutions: Accounting and Disclosure Rules**. 2nd ed. Hoboken, NJ: Wiley, 2007.
12. Tarun K. Mukherjee. **A survey of Corporate Leasing Analysis**. Financial Management 20 (Autumn 1991), 96-107
13. Van Horne, James C., and John M. Jr Wachowicz. **Fundamentals of Financial Management**. 12th ed. Harlow: FT Prentice Hall, 2005.
14. Van Horne, James C. **Fundamentals of Financial Management and Policy**. 8th ed. Prentice-Hall, 1989

15. European Commission. *International Accounting Standard 17, Leases. EC Staff consolidated version* [online]. Available at: <http://ec.europa.eu/internal_market/accounting/docs/consolidated/ias17_en.pdf> [accessed at 1 April 2017]

16. IFRS Official website, *IAS 17, Technical Summary* [online]. Available at: <http://www.ifrs.org/Documents/IAS17.pdf> [accessed at 1 April 2017]

17. European Parliament. *Tax Competition in the European Union. Part II. Taxed on labor, on savings and on corporations* [online]. Available at: < http://www.europarl.europa.eu/workingpapers/econ/105/part2c_en.htm> [accessed at 1 April 2017]

18. OECD statistics database. *Corporate income tax rate* [online]. Available at: < http://stats.oecd.org//Index.aspx?QueryId=58204#> [accessed at 1 April 2017]

19. European Commission. *Quarterly Report on the Euro Area 2013, corporate taxation and the composition of capital* [online]. Available at: <http://ec.europa.eu/economy_finance/publications/qr_euro_area/2013/pdf/qrea4_section_4_en.pdf > [accessed at 1 April 2017]

20. Leaseurope Official Website. *Market Trends & Research* [online]. Available at: < http://www.leaseurope.org/ > [accessed at 1 April 2017]

21. Erns &Young. *Worldwide Capital and Fixed Assets Guide 2016* [online]. Available at: < http://www.ey.com/Publication/vwLUAssets/Worldwide_Capital_and_Fixed_Assets_Guide_2016/$FILE/Worldwide%20Capital%20and%20Fixed%20Assets%20Guide%202016.pdf > [accessed at 1 April 2017]

22. Leaseurope. *Key facts and Figures 2015* [online]. Available at: http://www.leaseurope.org/uploads/documents/LeaseuropeFF_15.pdf [accessed at 1 April 2017]

23. Leaseurope*. Ranking of Top European Leasing companies 2015* [online]. Available at: <http://www.leaseurope.org/uploads/documents/ranking/Leaseurope%20Ranking%20Survey%202015_Public.pdf> [accessed at 1 April 2017]

24. IBM. *The Fair Market Value Leasing Advantage*. Available at: < https://www-01.ibm.com/common/ssi/cgi-bin/ssialias?htmlfid=GFS03097USEN > [accessed at 1 May 2017]